

Remarks

Claims 1-3, 6-15, and 17-21 are now pending in this application. Claims 1-21 are rejected. Claims 4, 5 and 16 are canceled without prejudice, waiver, or disclaimer. Claims 1-4, 6, 9-13, 15, 17, and 19-21 have been amended. No new matter has been added.

The rejection of Claims 1-21 under 35 U.S.C. § 103(a) as being unpatentable over Hart et al. (U.S. Patent No. 6,005,759) in view of Swales ("Open MODBUS/TCP Specification", Release 1.0, Schneider Electric, 29 March 1999) is respectfully traversed.

Hart et al. describe a system in which a network of intelligent electronic devices (IEDs) appear as a network of multiple protocol devices, e.g., as a network of MODBUS protocol network devices and a network of distributed network protocol (DNP) network devices (column 13, lines 51-55). To implement the different network protocols for the same devices, one of the protocols is encapsulated at an entry point into the other protocol and transmitted to an appropriate IED slave device, preferably based upon an address of the slave device, which removes the message and processes a return message that is sent back to a master application (column 13, lines 55-63). A gateway (17) builds a message going out from the master application and coming in from the slave device (column 13, lines 63-65)

Swales describes a method in which when MODBUS is carried over TCP, additional length information is carried in a prefix to allow a recipient to recognize message boundaries even if the message has to be split into multiple packets for transmission (page 5). In the method, a server establishes a TCP connection to a port, prepares a MODBUS request, submits the MODBUS request, including its 6-byte MODBUS/TCP prefix, as a single buffer to be transmitted, and waits for a response on the TCP connection (pages 19, 20). The server generates a MODBUS/TCP prefix for the response (pages 19, 20).

Claim 1 recites a power control management system comprising "at least one intelligent end device (IED); a control computer comprising an Ethernet server configured to create and encapsulate a first set of messages intended for said at least

one IED, in an industry standard format; and an Ethernet gateway configured to communicate with said server and transmit the first set of messages to said at least one IED, wherein said gateway further configured to encapsulate a second set of messages returned from said at least one IED with an industry standard header and footer for transmission to said Ethernet server.”

Neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a power control management system as recited in Claim 1. Specifically, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest an Ethernet gateway configured to communicate with the server and transmit the first set of messages to the at least one IED, where the gateway further configured to encapsulate a second set of messages returned from the at least one IED with an industry standard header and footer for transmission to the Ethernet server. Rather, Hart et al. describe a gateway that encapsulates one of the protocols at an entry point into another protocol and transmits the encapsulated protocol to an appropriate IED slave device, and Swales describes a server that submits a MODBUS request with a 6-byte MODBUS/TCP prefix, as a single buffer to be transmitted and generates a MODBUS/TCP prefix for a response. Accordingly, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest an Ethernet gateway configured to encapsulate a second set of messages returned from at least one IED with an industry standard header and footer for transmission to the Ethernet server. For the reasons set forth above, Claim 1 is submitted to be patentable over Hart et al. in view of Swales.

Claims 4 and 5 have been canceled. Claims 2-3 and 6-8 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 2-3 and 6-8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-3 and 6-8 likewise are patentable over Hart et al. in view of Swales.

Claim 9 recites a method for communicating with intelligent end devices (IEDs) in a power control management system including at least one IED, an Ethernet gateway, and a control computer including an Ethernet server, the method comprising the steps of “electrically connecting the Ethernet gateway to the Ethernet server;

configuring the server to create and encapsulate a first set of messages intended for IEDs in an industry standard format, wherein said configuring the server to create and encapsulate the first set of messages includes configuring the server to generate a second set of encapsulated messages by encapsulating the first set of messages; configuring the gateway to remove the encapsulation from the second set of encapsulated messages for transmission to the IEDs, wherein said configuring the gateway to remove the encapsulation from the second set of encapsulated messages comprises configuring the gateway to extract an industry standard header and an industry standard footer from the second set of encapsulated messages; and transmitting the first set of messages to the IEDs.”

Neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a method for communicating with intelligent end devices as recited in Claim 9. Specifically, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a method for communicating with intelligent end devices including configuring the gateway to remove the encapsulation from the second set of encapsulated messages for transmission to the IEDs, where configuring the gateway to remove the encapsulation from the second set of encapsulated messages includes configuring the gateway to extract an industry standard header and an industry standard footer from the second set of encapsulated messages. Rather, Hart et al. describe a gateway that encapsulates one of the protocols at an entry point into another protocol and transmits the encapsulated protocol to an appropriate IED slave device, and Swales describes a server that submits a MODBUS request with a 6-byte MODBUS/TCP prefix, as a single buffer to be transmitted and generates a MODBUS/TCP prefix for a response. Accordingly, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a method for communicating with intelligent end devices including configuring the gateway to extract an industry standard header and an industry standard footer from the second set of encapsulated messages. For the reasons set forth above, Claim 9 is submitted to be patentable over Hart et al. in view of Swales.

Claims 10-14 depend, directly or indirectly, from independent Claim 9. When the recitations of Claims 10-14 are considered in combination with the recitations of

Claim 9, Applicants submit that dependent Claims 10-14 likewise are patentable over Hart et al. in view of Swales.

Claim 15 recites a computer programmed to “create and encapsulate messages in an industry standard format, said computer further programmed to function as an Ethernet server for transmission of the messages and encapsulate the messages with a TCP/IP Ethernet header and footer, wherein the messages are received by an intelligent end device.”

Neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a computer as recited in Claim 15. Specifically, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a computer programmed to function as an Ethernet server for transmission of the messages and encapsulate the messages with a TCP/IP Ethernet header and footer, where the messages are received by an intelligent end device. Rather, Hart et al. describe a gateway that encapsulates one of the protocols at an entry point into another protocol and transmits the encapsulated protocol to an appropriate IED slave device, and Swales describes a server that submits a MODBUS request with a 6-byte MODBUS/TCP prefix, as a single buffer to be transmitted and generates a MODBUS/TCP prefix for a response. Accordingly, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a computer programmed to function as an Ethernet server and encapsulate the messages with a TCP/IP Ethernet header and footer, where the messages are received by an intelligent end device. For the reasons set forth above, Claim 15 is submitted to be patentable over Hart et al. in view of Swales.

Claim 16 has been canceled.

Claim 17 recites an Ethernet gateway comprising a programmable hardware device configured to “receive a first set of Ethernet messages from an Ethernet server in an industry standard format; remove both an Ethernet header and footer from the first set of Ethernet messages, leaving a second set of messages for transmission to at least one intelligent end device (IED); and transmit the second set of messages to the at least one IED.”

Neither Hart et al. nor Swales, considered alone or in combination, describe or suggest an Ethernet gateway comprising a programmable hardware as recited in Claim 17. Specifically, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a programmable hardware device configured to remove both an Ethernet header and footer from the first set of Ethernet messages, leaving a second set of messages for transmission to at least one intelligent end device. Rather, Hart et al. describe a gateway that encapsulates one of the protocols at an entry point into another protocol and transmits the encapsulated protocol to an appropriate IED slave device, and Swales describes a server that submits a MODBUS request with a 6-byte MODBUS/TCP prefix, as a single buffer to be transmitted and generates a MODBUS/TCP prefix for a response. Accordingly, neither Hart et al. nor Swales, considered alone or in combination, describe or suggest a programmable hardware device configured to remove both an Ethernet header and footer from a set of Ethernet messages, leaving a second set of messages for transmission to at least one intelligent end device. For the reasons set forth above, Claim 17 is submitted to be patentable over Hart et al. in view of Swales.

Claims 18-21 depend, directly or indirectly, from independent Claim 17. When the recitations of Claims 18-21 are considered in combination with the recitations of Claim 17, Applicants submit that dependent Claims 18-21 likewise are patentable over Hart et al. in view of Swales.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-21 be withdrawn.

Moreover, Applicants respectfully submit that the Section 103 rejection of Claims 1-21 is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Hart et al. nor Swales, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Hart et al. with Swales because there is no motivation to combine the references suggested in the cited art itself.

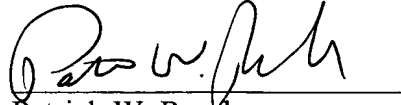
As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Hart et al. teach a gateway that encapsulates one of the protocols at an entry point into another protocol and transmits the encapsulated protocol to an appropriate IED slave device, and Swales teaches a server that submits a MODBUS request with a 6-byte MODBUS/TCP prefix, as a single buffer to be transmitted and generates a MODBUS/TCP prefix for a response. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejections of Claims 1-21 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the rejections of Claims 1-21 under 35 U.S.C. 103(a) be withdrawn.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Patrick W. Rasche", written over a horizontal line.

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